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## BELL COUNTY

### (Bell County Water Service Area Map)

- Estimated 1999 population of 29,000--73% on public water
- Estimated 2020 population of 26,600--80% on public water
- 275 miles of water lines, with plans for 110 additional miles
- Estimated funding needs for public water 2000-2005--\$5,500,000
- Estimated funding needs for public water 2006-2020--\$11,080,000

Bell County had an estimated population of 29,017 (11,576 households) in 1999 with a projected population of 26,582 (11,573 households) in 2020. Public water is provided to about 73 percent of the county's residents. In areas of the county not served by public water, about 75 percent of the households rely on private domestic wells and 25 percent of the households rely on other sources. About 800 customers will be added to public water service through new line extensions in 2000-2020.

#### *Estimated Costs - Proposed Projects, 2000-2005*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	In \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>BELL</b>								-
Pineville	29	96	1,500			4,000		5,500
U.S. Utilities								-
<b>Total</b>	<b>29</b>	<b>96</b>	<b>1,500</b>			<b>4,000</b>		<b>5,500</b>

#### *Estimated Costs - Proposed Projects, 2006-2020*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>BELL</b>								-
U.S. Utilities	2.2	12	190					190
Pineville Utilities	77	695	3,850	6,000			1,040	10,890
<b>Total</b>	<b>79.2</b>	<b>707</b>	<b>4,040</b>	<b>6,000</b>			<b>1,040</b>	<b>11,080</b>

### PUBLIC WATER SYSTEMS

There are 13 public and semi-public water systems in Bell County: 7 community systems--2 municipal, Pineville Water System and Kettle Island Water System; 4 private or investor-owned; 1 state-- and 6 non-community systems.

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# WATER SERVICE AREAS

## BELL COUNTY

### Kentucky

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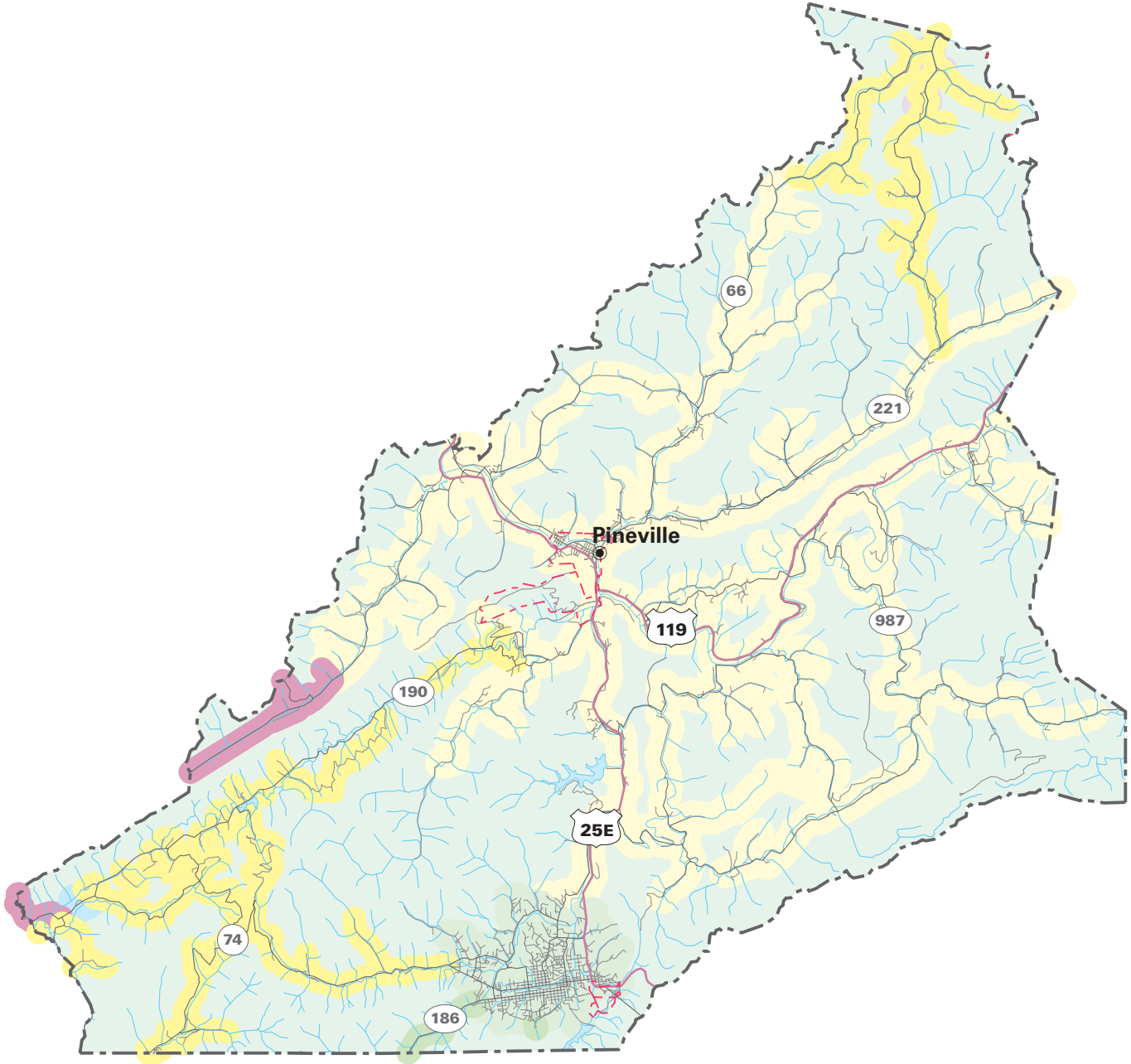
Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

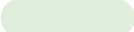



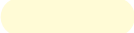
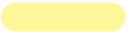
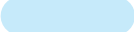



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WATER SERVICE STATUS BY OWNER		
EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		U.S. UTILITIES
		REDBIRD MISSION/BEVERLY
		PINEVILLE WATER SYSTEM
		HENDERSON SETTLEMENT
		EAST KNOX WATER DISTRICT



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### **U.S. UTILITIES**

PWSID: ..... 0070282  
System Type: ..... COMMUNITY  
Owner Type: ..... INVESTOR-OWNED UTILITY  
Surface Source: ..... FERN LAKE  
Purchase Source: ..... FERN LAKE CO.  
Well Source:  
Sells Water to:  
Treatment Plant Capacity (MGD): ..... 3.0  
Percent Daily Average Production: ..... 43.00  
Total Tank Storage Capacity (gallons): ..... 1,200,000.00  
Total Service Connections: ..... 5,547.00  
Number of Employees: ..... 13.00  
Treatment Operator Class: ..... 3D  
Distribution Operator Class: ..... 4A  
Customer Rate for 1,000 Gallons: ..... 5.60  
O/M costs 1997: ..... Not available  
O/M costs per Service Connection: ..... Not available  
Net Revenue 1997: ..... Not available  
Total Water Produced 1997 (gallons): ..... Not available  
Water Sold 1997 (gallons): ..... Not available  
Unaccounted-for Water 1997 (%): ..... Not available

U.S. Utilities gets raw water from Fern Lake and according to the Bell County Water Supply for the year 2010 the source will be inadequate. U. S. Utilities is currently selling water to Pineville Water System. Pineville Water System is in the process of upgrading their water treatment plant. When the upgrade to the plant is completed U. S. Utilities will be able to purchase water from the Pineville Water System if/or when the water supply becomes inadequate. This system currently services 4,700 households in Bell County. The water treatment plant has a capacity of 3 million gallons per day. On an average day the plant produces approximately 1.2 millions of gallons per day which is 40% of the total capacity. The storage capacity is approximately 1.2 million gallons of water for both of their clear wells. The current charge of \$5.60 for the base usage of 1,000 gallons of water is for residential, commercial, and industrial.

### **PINEVILLE WATER SYSTEM**

PWSID: ..... 0070353  
System Type: ..... COMMUNITY  
Owner Type: ..... MUNICIPAL  
Surface Source: ..... CANNON CREEK  
Purchase Source:  
Well Source:  
Sells Water to: ..... GREEN HILLS WATER DISTRICT

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Treatment Plant Capacity (MGD):.....	2.00
Percent Daily Average Production:.....	74.00
Total Tank Storage Capacity (gallons):.....	100,000.00
Total Service Connections: .....	3,850.00
Number of Employees:.....	19.00
Treatment Operator Class: .....	2D
Distribution Operator Class:.....	3A
Customer Rate for 1,000 Gallons:.....	5.36
O/M costs 1997:.....	Not available
O/M costs per Service Connection: .....	Not available
Net Revenue 1997:.....	Not available
Total Water Produced 1997 (gallons):.....	Not available
Water Sold 1997 (gallons):.....	Not available
Unaccounted-for Water 1997 (%): .....	Not available

The Pineville Water System acquires water from Cannon Creek Lake, which is located south of Pineville. The Water Supply Plan for Bell County concludes that the source is more than adequate well beyond the year 2010. This system has reached an agreement with U.S. Utilities to purchase water while the plant capacity is increased from 2 million gallons per day to 3 million gallons per day. The system currently serves 3,700 residential and 150 commercial customers. On an average day the plant produces 1.4 million gallons of water per day. The upgrade will be needed as this system keeps providing service throughout the county. The total storage capacity of the plant is 2,194,000 from various wells located throughout the county. The current purchase price for the base usage is \$5.36 for 1,000 gallons of water.

Pineville Water System serves the entire county except for the city of Middlesboro and some smaller systems like Frakes Elementary and Red Bird Mission. This water system is currently expanding to all areas within the county. Residents in the county that are not serviced by this system currently have wells, creeks, or springs for a source of water. Pollution from straight pipes and open dumps may/have polluted these sources of water that residents are using that are not currently serviced by these two systems. There is a need for potable water in the areas of the county that are not currently being served by either water system.

#### **KETTLE ISLAND WATER SYSTEM**

Kettle Island Water System is located in Bell County. The system serves a population of 396 and has 120 service connections. The community system has treatment capacity of 29,700 gallons per day and the water source is springs.

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## OTHER SYSTEMS

### **REDBIRD MISSION/BEVERLY**

PWSID: ..... 0070459  
System Type: ..... COMMUNITY  
Owner Type: ..... PRIVATE  
Surface Source:  
Purchase Source:  
Well Source:  
Sells Water to:  
Treatment Plant Capacity (MGD): ..... 0.02  
Percent Daily Average Production: ..... 8.00  
Total Tank Storage Capacity (gallons): ..... 0.00  
Total Service Connections: ..... 0.00  
Number of Employees: ..... 0.00  
Treatment Operator Class:  
Distribution Operator Class: ..... 1BD  
Customer Rate for 1,000 Gallons: ..... Not available  
O/M costs 1997: ..... Not available  
O/M costs per Service Connection: ..... Not available  
Net Revenue 1997: ..... Not available  
Total Water Produced 1997 (gallons): ..... Not available  
Water Sold 1997 (gallons): ..... Not available  
Unaccounted-for Water 1997 (%): ..... Not available

Redbird Mission/Beverly is located in Bell County. The system serves a population of 30 and has 15 service connections. The private, community system has treatment capacity of 10,800 gallons per day and the water source is wells.

### **COCA COLA BOTTLING SPRING WATER**

Coca Cola Bottling Spring Water is located in Bell County. The system serves a population of 1,535 and has 1 service connection. The investor-owned, community system has treatment capacity of 90,000 gallons per day and the water source is the Tennessee River.

### **BELL COUNTY FORESTRY CAMP**

Bell County Forestry Camp is located in Bell County. The system serves a population of 265 and has 12 service connections. The state, community system has treatment capacity of 16,800 gallons per day and the water source is Camp Lake.

### **HENDERSON SETTLEMENT**

PWSID: ..... 0070734  
System Type: ..... COMMUNITY  
Owner Type: ..... PRIVATE  
Surface Source: ..... LAKE

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Purchase Source:  
Well Source:  
Sells Water to:  
Treatment Plant Capacity (MGD):..... 0.04  
Percent Daily Average Production:..... 22.00  
Total Tank Storage Capacity (gallons):..... 15,000.00  
Total Service Connections: ..... 35.00  
Number of Employees:..... 2.00  
Treatment Operator Class:  
Distribution Operator Class:..... 1BD  
Customer Rate for 1,000 Gallons:..... Not available  
O/M costs 1997:..... Not available  
O/M costs per Service Connection: ..... Not available  
Net Revenue 1997:..... Not available  
Total Water Produced 1997 (gallons):..... Not available  
Water Sold 1997 (gallons):..... Not available  
Unaccounted-for Water 1997 (%): ..... Not available

Henderson Settlement is located in Bell County. The system serves a population of 105 and has 25 service connections. The private, community system has treatment capacity of 41,760 gallons per day and storage capacity of 15,000 gallons. The water source is an impoundment.

**FRAKES ELEMENTARY SCHOOL**

PWSID:..... 0072158  
System Type:..... NON TRANSIENT NON COMMUNITY  
Owner Type:..... LOCAL GOVERNMENT OR SCHOOL BOARD  
Surface Source:  
Purchase Source:  
Well Source:  
Sells Water to:  
Treatment Plant Capacity (MGD):..... 0.24  
Percent Daily Average Production:..... 100.00  
Total Tank Storage Capacity (gallons):..... 0.00  
Total Service Connections: ..... 2.00  
Number of Employees:..... 16.00  
Treatment Operator Class:  
Distribution Operator Class:..... 1BD  
Customer Rate for 1,000 Gallons:..... Not available  
O/M costs 1997:..... Not available  
O/M costs per Service Connection: ..... Not available  
Net Revenue 1997:..... Not available  
Total Water Produced 1997 (gallons):..... Not available  
Water Sold 1997 (gallons):..... Not available  
Unaccounted-for Water 1997 (%): ..... Not available

Frakes Elementary School is located in Bell County. The system serves a population of 150 and has 2 service connections. The local, non-transient, non-community system has treatment capacity of 1,000 gallons per day and the water source is wells.

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### **CUMBERLAND GAP NATIONAL HISTORIC PARK (NHP)/SUGAR RUN**

Cumberland Gap National Historic Park (NHP)/Sugar Run is located in Bell County. The system serves a population of 25 and has 1 service connection. The federal, transient, non-community system has treatment capacity of 25,000 gallons per day and the water source is wells.

### **CUMBERLAND GAP NHP/HENSLEY SET**

Cumberland Gap NHP/Hensley Set is located in Bell County. The system serves a population of 25 and has 6 service connections. The federal, transient, non-community system has treatment capacity of 25,000 gallons per day and the water source is wells

### **CUMBERLAND GAP NHP/PINNACLE**

Cumberland Gap NHP/Pinnacle is located in Bell County. The system serves a population of 50 and has 1 service connection. The federal, transient, non-community system has treatment capacity of 6,000 gallons per day and the water source is wells.

### **CUBBAGE ELEMENTARY SCHOOL**

Cubbage Elementary School is located in Bell County. The system serves a population of 90 and has 3 service connections. The local, non-transient, non-community system has treatment capacity of 10,000 gallons per day and the water source is wells

### **PARTIN HOUSE WATER SYSTEM**

Partin House Water System is located in Bell County. The system serves a population of 40 and has 7 service connections. The private, transient, non-community system has treatment capacity of 7,200 gallons per day and the water source is wells.

### **PRIVATE DOMESTIC SYSTEMS**

About 7,950 people in Bell County rely on private domestic water supplies: 5,950 on wells and 2,000 on other sources.

Most wells drilled in valley bottoms are adequate for domestic supply. In central and southern Bell County fewer than half the wells drilled on hillsides and fewer wells on hilltops are adequate for a domestic supply. In the northern half of Bell County and along Pine Mountain where water is more plentiful three-quarters of the wells on hillsides and

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some wells on hilltops are adequate for a domestic supply. The northern half of the county also has the potential to produce high yielding wells below 200 feet that could provide sufficient water for small municipal or industrial supplies.

Ground water obtained from most drilled wells in this area is moderately hard and contains noticeable amounts of iron. Salty water probably will not be found less than 200 feet below the principal valley bottoms in the southern half of the county and 300 feet in the northern half of the county.

A few high volume springs are found east of Middlesboro and along Pine Mountain, which yield as much as 400 gallons per minute. Most springs in the rest of the county yield less than 5gpm.

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